

Fig. 10. Larva taken from the brood-leaves of the female, magnified 180 diameters.

Fig. 11. Foot of the male.

Figs. 12-16. Feet of the larva: 12, from the last thoracic segment; 13, from the first; 14, from the third; 15, from the fifth; and 16, from the last abdominal segment.

X.—*Notice of the Discovery, by the Barão do Castello de Paiva, of the Fossil Helix coronula recent, and of other new Land-Mollusca, in Madeira.* By R. T. LOWE, M.A.

TEN or twelve years ago I showed the proportion between the apparently extinct or yet undiscovered recent shells of Caniçal, and those of the same deposit which had been then found living in Madeira, to be as 10 to 35 or 38, *i. e.* as 1 to $3\frac{1}{2}$ or $3\frac{4}{5}$,—*i. e.* very nearly 29 or 27 per cent. (See Prim. Faunæ et Floræ Mad. ed. 2. App. p. xiv.) However, even this per-centage had been plainly on the wane—reduced directly by the discovery, in 1855 and several following years, at three or four points along the north coast of Madeira, by Mr. Wollaston and myself, of living *Helix tiarella*, Webb, and affected, doubtless, indirectly by that of *H. spherula*, Lowe, γ *major*, found alive in Porto Santo by myself, and of the peculiarly Porto-Santan fossil, *H. Lowei*, Fér., living at a considerable depth below the surface in the Ilheo de Cima, off the east end of Porto Santo, by Sr J. M. Moniz. To these two latter facts, indicative of the probability of still further actual diminution of the ratio between the extinct and still existing shells of Caniçal, I may add my own discovery in Madeira proper, two years ago, of a living species (*H. delphinuloides*, Lowe) so nearly allied to the very abundant and characteristic Caniçal fossil *H. delphinula*, that the occurrence of that remarkable species itself recent in Madeira may be somewhat confidently looked for.

I am now authorized by my excellent and zealous friend, the Barão do Castello de Paiva, to announce some late discoveries of his, still further tending in the same direction. One of these is that of a living *Helix* (*H. galeata*, Paiva, MSS.) so remarkable in form and aspect that my first impression was a ready acquiescence in the Baron's proposal to bestow on it, as an entirely new species, the very appropriate name of *H. galeata*, referring appositely to its peculiar helmet-like or beehive shape. A close comparison, however, of his shells with numerous examples of the Caniçal fossil "*Helix calva*, Lowe (var. *fere major*)," Prim. ed. 2. App. p. xiii., has since led me to believe it to be rather a singularly convex extreme form of that variety, differing, indeed, remarkably from the usual aspect of the shell in question in its

peculiar globosely conoidal shape, elevated cupola or dome-like spire, flattened volutions, and distinct fine superficial spiral lines (like those of the common normal recent var. α), but passing so gradually into the flatter normal forms of β *major*, through certain intermediately convex examples of the latter, that, considering also the width of varietal range exhibited already under *H. calva*, I cannot venture to go further than regard it as constituting at most a third var., γ . *galeata*, of that species.

Several examples of this fine and interesting shell were found, late in the spring of 1861, by a man employed in collecting for the Baron along the new Levada da Fajãa dos Vinhaticos, in the Ribeiro do Fayal, towards or near the place where I discovered, two years ago, *H. delphinuloides* (Ann. Nat. Hist. July 1860).

2. The discovery of two recent living examples, in Madeira proper, of *H. coronula*, Lowe (a shell only hitherto known as a fossil of the South Deserta, or Bugio) is a second and still more important addition, by the Baron's persevering industry, to the existing Molluscan Fauna of Madeira. They were found, two or three months ago, along the south coast of the island, to the east of Funchal, "on declivities above the sea between the Garajão or Caniço and S^{ta} Cruz," unwittingly, by a collector employed by the Baron de Paiva, who himself happily detected them amidst a miscellaneous heap of various other living Madeiran sub-maritime Pneumonobranchiates, consisting chiefly (as I myself observed) of *Achatina tornatellina* β , *Helix bifrons*, *H. polymorpha* α , *Cyclostoma Moniziana*, &c., such as occur usually along the south coast of Madeira to the eastward. One of the examples is considerably more convex than the other, which is also frequently the case in the South Desertan fossils, and is pale chalky white, like *H. tiarella*, Webb; whilst the other is of a brownish flesh-colour, like *H. delphinuloides* usually. The sculpture altogether, and especially the spiral grooves and cancellations underneath, are in both examples less distinct than in the fossil shells from the Bugio; but they are both more decidedly bicarinated than the latter. The animals were almost colourless or pale subpellucid whitish ash, tinged with very pale ochraceous or raw sienna, strikingly different from the peculiarly dark or blackish animals of *H. tiarella*. These two most rare and interesting shells have been generously added by their fortunate discoverer to my own collection.

On revision, therefore, of the list in my Appendix above quoted of the Caniçal fossils, the only absolute corrections will be the insertion of *H. tiarella*, Webb, in the right-hand column of recent homologues at p. xiii., reading, moreover, *H. arcinella* α & β for *H. fausta* β . *minor* and γ . *minima*, and *Achatina Cylichna* for *A. truncata* (a name preoccupied by Gmelin) in the left-hand

column at p. xiv., and adding *Cyclostoma flavescens*, Lowe, to both columns.

Thus the apparently extinct or yet undiscovered living shells of Caniçal will now stand to the recent of the same deposit in the diminished ratio of 9 to 36 or 39, *i. e.* of 1 to 4 or $4\frac{1}{3}$, *i. e.* 25 per cent. exactly, or $23\frac{1}{4}$ very nearly.

But if the fossil shells of the entire Madeiran group, consisting of Madeira, Porto Santo, and the three Desertas, be regarded as one whole, it is evident, from the facts above mentioned, that the proportion between the apparently extinct and recent shells in these deposits, considered jointly, will be much more considerably reduced than it appears in the above corrected list confined to Madeira proper. For thus, in fact, there will remain no characteristic or conspicuous fossil shell undiscovered recent, except *H. delphinula*, which, however, may itself be reasonably expected to reward, with the few other minuter species, the close researches of some future naturalist.

3. *Helix tetrica*, Paiva.

T. supra nigricans vel latissime nigro fasciata, depresso-discoidea, subplanata, carinata, solida, undique confertissime granulis distinctissimis albidis prominentibus grosse scobinata; carina acuta, expressuscula, vix limbata, subsupera; spira convexo-depressa, subplanata, pulvinata, sc. anfractui ult. antice tumidulo superimposita; anfractibus convexusculis, penultimo antice subdepresso, sutura distincta; umbil. maximo, aperto, patulo, spirali, $\frac{1}{3}$ diam. maj. latitudine æquante.

Diam. maj. 13–15, min. 11–12, alt. 7–8 mill; anfr. 7–8.

Hab. in ins. Deserta Australi in præruptis excelsis maritimis “inter lichenes.”

A fine and certainly new species of the *H. polymorpha* tribe, very distinct from *H. senilis* β^* , to which, when sent to me last year by the Barão de Paiva, I at first referred it, by reason of its large wide open umbilicus and much coarser granulations. In both these points, with the addition of its flattened discoidal shape, it is also quite distinct from *H. polymorpha* or *H. pulvinata*. A few examples were found by a man collecting for the Baron “on the S. Deserta, or Bugio, amongst lichens on the sea-cliffs,” in the spring of 1861. The colouring is precisely that of *H. polymorpha*, var. β . *nigricans*, subvar. 1 or 3,—viz. dark coffee-brown above, relieved only in two of the four specimens before me by a pale line along the keel and suture. Beneath,

* Lowe, Syn. Diagn. in Ann. and Mag. ser. 2. vol. ix. p. 116; and Catal. Moll. Mad. in Proc. Zool. Soc. (1854), part xxii. p. 189. Supposing, however, *H. senilis*, Morelet, in Journ. de Conch. (1851) ii. 353, to be a good species, *H. senilis*, Lowe, must be changed into *H. salebrosa*.

all of them are pale, with two broad dark-brown bands, the upper of which is subdivided into two or three in two of the examples.

4. A *Physa*, which in degree of ventricosity is intermediate between *P. acuta*, Drap. t. iii. f. 10, 11, and the more elongated or slender common Canarian shell so called by Webb, has been also given to me by the Baron de Paiva, as found in the Rib. dos Soccorridos and that of Gonçalo Ayres, near Funchal. It closely resembles "the rare long-spined var." of *P. fontinalis* (L.), Forbes and Hanl. iv. 142, t. 122. f. 10.

Lea Rectory, June 25, 1862.

XI.—Notice of a new Species of the Carabideous Genus Mormolyce. By J. O. WESTWOOD, M.A. &c.

THE confirmation of genera, established upon unique species, and often even upon single specimens, by the discovery of additional members of the group, is always satisfactory, and, in the case of very extreme types of form, highly interesting with reference to the question of the development of particular organs or portions of organs, as well as to that of the modification of form resulting from geographical distribution or other analogous causes.

The genus *Mormolyce*, founded by Hagenbach upon one of the most remarkable types of Carabideous insects, has long been known only by a single representative, *M. phyllodes*, a native of Java. Its relations have, as may easily be conceived, been the subject of much discussion, the genus having been placed in the great division Truncatipennes, as well as in that of the Thoracici. Instead of the compact, robust form which is typical of the Carabidæ, we have an attenuated structure, with slender limbs, indicating great weakness of locomotive powers, united to a slightly developed oral structure, proving the insect to be destitute of those prædaceous habits which are so eminently characteristic of the family as to have earned for them the sectional name of Adepaga. We must suppose a *Carabus* or *Harpalus* to have been both drawn out longitudinally and flattened out laterally, so that the elytra present great flattened dilatations extending beyond the body in the form of two rounded spatulæ, —the whole represented best by a piece of the thin kind of gingerbread known by the name of "jumbles."

Although originally known as a native of Java, specimens of *M. phyllodes* have been received from Malacca; and with the latter there has been found associated a considerable number of individuals of a distinct species, of which the following diagnosis